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MEMORANDUM REPORT

TO: Mr. Barry S. Drucker, Physical Scientist, Contracting Officer's Technical Representative (COTR, U. S. Department of Interior Minerals Management Service (MMS), Sand and Gravel Program, 381 Elden St., Mail Stop 4010, Herndon, VA 20170-4817
FROM: Kim Zarillo, Program Manager, SEA 5575 Willoughby Dr., Melbourne, FL 32934, Telephone/facsimile: 321.254.2708, email seapp1@aol.com
DATE: November 30, 2005
SUBJECT: Bimonthly Progress Report-2 for Contract No. 1435-01-05-CT-39054 Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf

1. Summary of Work Accomplished and Progress Status of Project Items and Tasks

The contract award date was July 22, 2005. This report covers the period from September 24, 2005 to November 30, 2005.

- **Item 2 (Task 2): Compilation and synthesis of existing biological and physical information** Draft Report on Existing Biological and Physical Information for the project was submitted to the COTR.

- **Item 3 (Task 3) Program development to address biological and physical issues associated with the use of potential sand borrow areas offshore of the West coast of Florida –** A subtask of Item 3 - the fall field sampling event field cruise plan "Minerals Management Service (MMS) West Florida Sand Borrow Area Cruise" was provided to the COTR for the fall field event, which took place October 3-7, 2005 on the FIO research vessel the Suncoaster. The fall field event was successful despite the threat of hurricane(s) and tropical storm weather. Samples collected during the fall field event are being processed. Model domain topography for all areas has been collected. Work on model grids and model input data is ongoing.

Deliverables from Tasks 4, 5, and 6 will be divided into two categories technical and non-technical:

- **Item 4 (Task 4): Preparation of the Draft And Final Technical Manuscript and**
- **Item 5 (Task 5): Draft and Final Technical Summaries** – Drafts of various sections will be provided during **Item 3 (Task 3)** beginning January 2006. The complete draft is due March 2007.

- **Item 6 (Task 6) Submission of Draft and Final Non-Technical Summaries** -- Drafts of various sections will be provided during Item 3 (Task 3). Drafts of various sections will be provided throughout Item 3 (Task 3) beginning April 2006. The complete draft is due March 2007.

- **Item 7 (Task 7): Submission of Draft Scientific Paper and Paper to Refereed Journal** -- A draft scientific paper is due October 2007.

- **Item 8 (Task 8) Presentation at MMS Information Transfer Meeting or Other Scientific, or Technical Conferences, or Meetings –** A ITM or conference is planned for February 2008.

- **Item 9 (Task 9) Bi-Monthly Progress Reports –** This is Progress Report 1 of 16 to be completed over the 32 month contract.

- **Item 10 (Task 10) Presentation Slide Sets -** A draft slide set is due July 2007.

- **Item 11 (Task 11) Spatial Data Files –** Data files are due July 2007.

- **Item 12: Program Management and Control Requirements** -- The Program Manger maintains ongoing communication with the COTR and PIs. The Program Manager is tracking costs and keeping within budget.

- **Item 13 Data Management** – The Program Manager coordinated with PIs to complete a draft and final data management plan. The Data Management Plan for MMS Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf - Contract No. 1435-01-05-CT-39054 was completed in August 2005. The PM is coordinating ongoing data transfer.

2. Significant Problems Encountered

No significant problems have been encountered in the report time frame. An issue causing the most concern was late start date relative to the scheduled field event as proposed in the Technical Presentation. The amount of time for planning and organizing the first field event and collecting existing information under Task 1 was compressed in order to keep biological sampling within time periods that correspond to the fall season. However, the Project team was able to complete Item 2 (Task2); and the fall field event a subtask of Item 3 (Task 3).

3. Summary and Interpretation of Technical Findings

A summary of the findings as provided in the draft report of the existing biological and physical information were as follows:

The west Florida Shelf is among the widest in the world extending more than 300 miles in width from the modern shoreline to the break in slope at approximately 200 meters depth. Inner shelf topography to depths of approximately 60 feet (about 20 meters) has been mapped in detail.

These survey data extending back more than 100 years, are readily available from the National Geodetic Data Center's Coastal Relief Model. Publicly held data from the Continental Slope and Rise, as well as the deep Gulf of Mexico Basin are also available from the National Geodetic Data Center's marine geology mapping program. Major contributions to the geologic knowledge of the inner continental shelf stratigraphy and sedimentology have been provided through recent studies by the U.S. Geologic Survey (USGS) and associated academic partners at the University of South Florida. The USGS has also been active in compiling shoreline change data for the west Florida coast and other areas of the Gulf Coast of the U.S. The Florida Department of Environmental Protection (FDEP) likewise has contributed to the body of knowledge of the West Florida coast and inner continental shelf by compiling information from Florida counties and their engineering consultants related to environmental permitting of beach nourishment and associated sand source studies and dredging operation in state waters, which are within 9 nautical miles of the shoreline along the Gulf Coast. The FDEP has also initiated the Reconnaissance Offshore Sand Search (ROSS) data base, which is designed to compile geologic and geophysical data related to nearshore sand search projects into an interactive database. The database is completed for the Panhandle region of Florida and has been partially extended into west central and southwest Florida.

The physical oceanography of the west Florida Continental shelf has been the subject of academic research by various Florida universities for several decades, Within the past five years data collection and modeling efforts under the Congressionally funded Southeast U.S. Atlantic Coastal Ocean Observing System (SECOOS) have added the capability of viewing oceanographic processes of the Florida shelf in real time and viewing some types of forecast up to two days in advance.

Several comprehensive studies have characterized the biological resources, including benthos, of the Eastern Gulf of Mexico within which the project study areas are contained (e.g., Florida Department of Natural Resources - Hourglass Cruises various publications including Joyce and Williams 1969, Camp 1973, Serafy 1979, Huff and Cobb 1979, Myers 1981, Menzies and Kruczynski 1983; Dames and Moore 1979; Woodward-Clyde Consultants and Continental Shelf Associates, Inc. 1983,1984; Danek and Lewbel 1986, 1987).

Broad surveys of the fish communities present along the central west Florida shelf are limited. The most comprehensive recent coastal survey (Pierce and Mahmoudi, 2001) was a four-year trawling program along the west coast of peninsular Florida that sampled stations in depths of 6 to 27 m. Commercial fisheries landings are recorded for each Florida County and are compiled by the Fish and Wildlife Research Institute (FWRI) of the Florida Fish and Wildlife Conservation Commission. Recreational fisheries landings are monitored by a joint effort of FWRI and the National Marine Fisheries Service (NMFS). In addition, the Fisheries-Independent Monitoring (FIM) Program is an intensive temporal and spatial analysis of juvenile and adult fishes inhabiting various estuaries, including Charlotte Harbor and Tampa Bay.

Information gathered on sea birds, sea turtles, and marine mammals documents several federally regulated species potentially present in the project area. The fauna relationship(s) in the offshore and coastal areas habitats study sites is species specific with seasonal fluctuations. MMS studies (Avent 2004, Davis 1996, Davis et al, 2000, and Russel, 2005) and GeoCet unpublished

Offshore Bird Surveys (2005) and the MMS SWSS cruise (2004) provided data for large planning areas of the Gulf of Mexico. Federal information sources, such as a NOAA NMFS, ACOE, and USFWS and Florida state and local resources were used to confirm when possible the presence of species closer to the eastern Gulf of Mexico and in the project areas.

4. Summary of Significant Meetings

No significant meetings occurred in this report period.

5. Summary of Scheduled Work for the Next Two Months

Work will proceed on **Item 3 (Task 3)** Data collected from the fall field event will be analyzed Model grids for the three areas will be completed and input files will be post processed for model simulations.

6. Summary of MMS Questions and Resolution

No questions are outstanding at this time.